



PATENT APPLICATION

IN THE U.S. PATENT AND TRADEMARK OFFICE

July 20, 2009

Applicants: Joachim KOERNER et al

For: MICRODOSING DEVICE

Serial No.: 10/777 257

Group: 3772

Confirmation No.: 5395

Filed: February 12, 2004

Examiner: Patel

Atty. Docket No.: 5000.P0019US

Commissioner for Patents

P.O. Box 1450

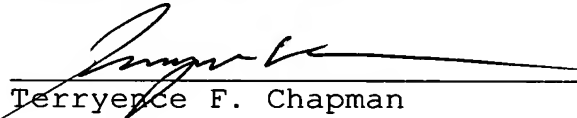
Alexandria, VA 22313-1450

**RESPONSE TO NOTIFICATION OF NON-COMPLIANT APPEAL BRIEF**

Sir:

In response to the Notification of Non-Compliant Appeal Brief dated June 24, 2009 (copy attached), enclosed herewith is a Second Supplemental Appellants' Brief on Appeal in which the Status of Claims has been corrected. Favorable consideration is respectfully solicited.

Respectfully submitted,

  
Terryence F. Chapman

TFC/smd

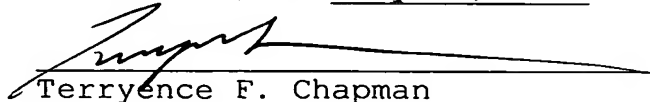
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Encl: Copy of Notification of Non-Compliant Appeal Brief  
Second Supplemental Appellants' Brief on Appeal  
Claims Appendix  
Evidence Appendix  
Related Proceedings Appendix  
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**CERTIFICATE OF MAILING**

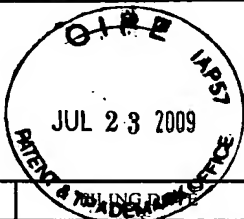
I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on July 20, 2009.

  
Terryence F. Chapman

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APPLICATION NO.	02/12/2004	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/777,257	02/12/2004	Joachim Koerner	5000.P0019US	5395
23474 7590 06/24/2009 FLYNN THIEL BOUTELL & TANIS, 2026 RAMBLING ROAD KALAMAZOO, MI 49008-1631		DHT DGB TFC MCM LLC BRT SRT DJW SBW JUN 26 2009 HJ PMG GMS CRA KC FILE		EXAMINER PATEL, NIHIR B
		ART UNIT		PAPER NUMBER
		3772		
		MAIL DATE		DELIVERY MODE
		06/24/2009		PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

FILE NO: RUFF 19 ATTY: TFC  
DUE DATE: 07-24-2009 ( 20090724 )  
5000.P0019US /INIT: ( 20090624 )  
ACTION: 10 RES PER: 1 M DK1  
RESP TO NON-COMPL. OA DUE / 1854

**Notification of Non-Compliant Appeal Brief  
(37 CFR 41.37)**

Application No.

10/777,257

Applicant(s)

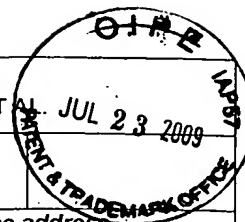
KOERNER ET AL.

Examiner

NIHIR PATEL

Art Unit

3772



*—The MAILING DATE of this communication appears on the cover sheet with the correspondence address—*

The Appeal Brief filed on June 15<sup>th</sup>, 2007 is defective for failure to comply with one or more provisions of 37 CFR 41.37.

To avoid dismissal of the appeal, applicant must file an amended brief or other appropriate correction (see MPEP 1205.03) within **ONE MONTH or THIRTY DAYS** from the mailing date of this Notification, whichever is longer.  
**EXTENSIONS OF THIS TIME PERIOD MAY BE GRANTED UNDER 37 CFR 1.136.**

1. ☐ The brief does not contain the items required under 37 CFR 41.37(c), or the items are not under the proper heading or in the proper order.
2. ☐ The brief does not contain a statement of the status of all claims, (e.g., rejected, allowed, withdrawn, objected to, canceled), or does not identify the appealed claims (37 CFR 41.37(c)(1)(iii)).
3. ☐ At least one amendment has been filed subsequent to the final rejection, and the brief does not contain a statement of the status of each such amendment (37 CFR 41.37(c)(1)(iv)).
4. ☐ (a) The brief does not contain a concise explanation of the subject matter defined in each of the independent claims involved in the appeal, referring to the specification by page and line number and to the drawings, if any, by reference characters; and/or (b) the brief fails to: (1) identify, for each independent claim involved in the appeal and for each dependent claim argued separately, every means plus function and step plus function under 35 U.S.C. 112, sixth paragraph, and/or (2) set forth the structure, material, or acts described in the specification as corresponding to each claimed function with reference to the specification by page and line number, and to the drawings, if any, by reference characters (37 CFR 41.37(c)(1)(v)).
5. ☐ The brief does not contain a concise statement of each ground of rejection presented for review (37 CFR 41.37(c)(1)(vi)).
6. ☐ The brief does not present an argument under a separate heading for each ground of rejection on appeal (37 CFR 41.37(c)(1)(vii)).
7. ☐ The brief does not contain a correct copy of the appealed claims as an appendix thereto (37 CFR 41.37(c)(1)(viii)).
8. ☐ The brief does not contain copies of the evidence submitted under 37 CFR 1.130, 1.131, or 1.132 or of any other evidence entered by the examiner **and relied upon by appellant in the appeal**, along with a statement setting forth where in the record that evidence was entered by the examiner, as an appendix thereto (37 CFR 41.37(c)(1)(ix)).
9. ☐ The brief does not contain copies of the decisions rendered by a court or the Board in the proceeding identified in the Related Appeals and Interferences section of the brief as an appendix thereto (37 CFR 41.37(c)(1)(x)).
10. ☒ Other (including any explanation in support of the above items):

The Status of Claims recited in the Appeal Brief filed on June 15<sup>th</sup>, 2007 is incorrect. The Status of Claims recites claims 10, 12, 14 and 15 have been rejected by the examiner under 35 USC 112, first paragraph, as failing to comply with the written description requirement. The examiner had withdrawn the 112, first paragraph rejection on claims 12, 14 and 15 as recited on the 1<sup>st</sup> paragraph of the final office action dated May 16<sup>th</sup>, 2006.

/Patricia Bianco/  
Supervisory Patent Examiner, Art Unit 3772

/Nihir Patel/  
Examiner, Art Unit 3772



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**SECOND SUPPLEMENTAL APPELLANTS' BRIEF ON APPEAL**

Sir:

This is an appeal from the final rejection dated May 16, 2006, finally rejecting Claims 10-19.

REAL PARTIES IN INTEREST

Ing. Erich Pfeiffer GmbH is the assignee of the present application and the real party in interest.

RELATED APPEALS AND INTERFERENCES

There are no related appeals and interferences with the present application.

STATUS OF CLAIMS

Claims 10-19 are pending in the present application and are under appeal. Claims 1-9 are canceled. Claim 10 has been rejected by the Examiner under 35 USC §112, first paragraph, as failing to comply with the written description requirement. Claims 10-19 have been rejected by the Examiner under 35 USC

\$102(b) as being anticipated by US Patent 6 196 219 to Hess et al.

STATUS OF AMENDMENTS

None.

SUMMARY OF CLAIMED SUBJECT MATTER

Appellants' invention, as defined by independent Claim 10, is directed to a method of operating a microdosing device. The microdosing device has a dosing chamber for reception of a liquid quantity, and at least one discharge opening is associated with the dosing chamber. A vibrating unit is in operative connection with at least one boundary surface of the dosing chamber in order to vibrate the same for a discharge process. A delivery function unit is connected to the vibrating unit for activating the latter during a delivery time period. The microdosing device also includes a drying function unit. The method includes the steps of activating the vibrating unit during a delivery time period, pausing for a pre-determined time separation period, and activating the drying function unit to remove liquid residues from the dosing chamber (Figures 1-3 and Specification page 2, line 1 through Specification page 8, line 9).

Appellants' invention, as defined by independent claim 12, is directed to a method of operating a microdosing device. The microdosing device has a dosing chamber for reception of a liquid quantity, and at least one discharge opening is associated with the dosing chamber. A vibrating unit is in operative connection with at least one boundary surface of the dosing chamber in order to vibrate the same for a discharge process. A delivery function unit is connected to the vibrating unit for activating the latter during a delivery time period. The microdosing device also includes a drying function unit, for removing liquid residues from the dosing chamber, which is configured for activation in time-separated manner with respect to the delivery function unit. The

delivery function unit and drying function unit are parts of a common electronic control device provided with a time function element for coordinating the time-separated activating processes of the delivery function unit and the drying function unit. The method includes the steps of activating the delivery function unit to dispense a medium, activating the time delay unit for a pre-determined time-separation, and activating the drying function unit for a drying process (Figures 1-3 and Specification page 2, line 1 through Specification page 8, line 9).

Appellants' invention, as defined by independent claim 14, is directed to a method for dosing small liquid quantities by the vibration of at least one boundary surface of a dosing chamber by activating and deactivating a vibrating unit. The method includes the steps of activating the vibrating unit for a delivery time period for the discharge of the liquid quantity, deactivating the vibrating unit and initiating a time delay, and initiating a drying process to remove liquid residues remaining in the dosing chamber (Figures 1-3 and Specification page 2, line 1 through Specification page 8, line 9).

#### GROUND OF REJECTION TO BE REVIEWED ON APPEAL

Appellants wish the Board of Appeal to review the rejection of Claim 10 as failing to comply with the written description requirement under 35 USC §112, first paragraph, and to review the rejection of Claims 10-19 under 35 USC §102(b) as being anticipated by US Patent 6 196 219 to Hess et al.

#### ARGUMENT

The presently claimed invention is directed to a microdosing device having a dosing chamber, with which is associated at least one discharge opening, and a vibrating unit in operative connection with at least one boundary surface of the dosing chamber in order to vibrate the dosing

chamber for a discharge process. A delivery function unit is connected to the vibrating unit for activating the vibrating unit during a delivery time period. A drying function unit is activated in time-separated manner from the delivery function unit in order to free the dosing chamber from liquid residues. As a result of the time separation of the delivery function and the drying function, a clearly time-defined dosability of the corresponding liquid is ensured. As a result, it is possible to keep the dosing volume the same based on the precise time interval of the delivery function. There is no lagging of the vibrating unit beyond the delivery time. In a pharmaceutical application, the drying function is performed in time-displaced manner with respect to the delivery period, so that any liquid residues which have passed to the outside during the drying process no longer enter the human body and are instead given off to the environment. Preferably, the vibrating unit operates with ultrasonic waves, in that a piezoelectric actuator is excited with a corresponding frequency. The vibrating unit can also have actuators, which operate with different excitation vibrations or waves.

U.S. Patent 6 196 219 to Hess et al. discloses a liquid droplet spray device for an inhaler that comprises a microdosing device with a dosing chamber for receiving a liquid quantity and with which is associated a discharge opening. The microdosing device includes a vibrating unit in operative connection with at least one boundary surface of the dosing chamber. The vibrating unit is disclosed as a piezoelectric element that is controllable for activation during the duration of an atomization cycle. The microdosing unit is also disclosed as including a flexible heating surface for heating the liquid to a predetermined temperature that is advantageous for dispersal. The heating element is also disclosed as being capable of contributing, at the end of the atomization cycle, to the evaporation of any liquid left in the dosing chamber, and that the vibrating unit may continue

operation for a predetermined time after the inhalation cycle has ended.

Rejection Under 35 USC §112

-Claim 10

According to Claim 10, a method of operating a microdosing device having a dosing chamber for the at least partial reception of a liquid quantity and with which is associated at least one discharge opening, a vibrating unit in operative connection with at least one boundary surface of the dosing chamber in order to vibrate the same for a discharge process, a delivery function unit, connected to the vibrating unit, for activating the latter during a delivery time period, and a drying function unit, comprises the steps of activating the vibrating unit during a delivery time period; *pausing for a pre-determined time separation period*; and activating the drying function unit to remove liquid residues from the dosing chamber. [Emphasis added]

In the rejection of Claim 10 under 35 USC §112, first paragraph, the Examiner states that the subject matter "pausing for a pre-determined time separation period" was not described in the specification.

This subject matter from Claim 10 is found in several locations in the specification and drawings. At paragraph [005], lines 1-5, it states "This problem is solved in that additionally a drying function unit is provided, which is activatable in time-separated manner from the delivery function in order to free the dosing chamber from liquid residues. As a result of the time separation of the delivery function and the drying function a clearly time-defined dosability of the corresponding liquid is ensured." At paragraph [005], lines 12-13: "According to the invention, the drying function is performed in time-displaced manner with respect to the application period..." In paragraph [008], lines 8-10, "The time function element ensures the time separation between the delivery function and the drying function."



Referring to Figure 2, paragraph [020], lines 42-43 of the specification, "As from the time t2 and up to a time t3 the piezoelectric actuator 6 is switched off, i.e. deactivated," and the final three lines of paragraph [020] refer to a subsequent application, i.e., "Now a further dosing process can take place, which once again leads in time-separated manner to a corresponding drying process."

Appellants argue that these recitations in the specification and drawings describe the claimed method step in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. In light of these recitations in the disclosure, reversal of the Examiner's rejection of Claim 10 under 35 USC §112, first paragraph, is respectfully solicited.

#### Rejections under 35 USC §102

In the rejection under 35 USC §102(b), the Examiner has stated that:

Hess discloses a liquid droplet spray device for an inhaler suitable for respiratory therapies that comprises a micro-dosing device 5 having a dosing chamber 9 for the at least partial reception of a liquid quantity and with which is associated at least one discharge opening 14, a vibrating unit 10 in operative connection with at least one boundary surface of the dosing chamber in order to vibrate the same for a discharge process, a delivery function unit, connected to the vibrating unit, for activating the latter during a delivery time period, and drying function unit, the method comprising the steps of activating the vibrating unit during a delivery time period; pausing for a pre-determined time separation period (**Inherently there is a pause between the inhalation period and the drying period**); and activating the drying function unit to remove liquid residues from the dosing chamber. [Emphasis in original]

#### -Claims 10-11

Appellants argue that Examiner's assertion that Hess et al. '219 discloses that "inherently there is a pause between the inhalation and the drying period" is incorrect. Hess et

al. '219 does not teach any pause between the inhalation and drying cycles, and the existence of a pause cannot be inferred from the absence of any disclosure related to the switching from the inhalation to the drying cycles. However, even if a pause were believed to be inherent, such disclosure still does not reach the claimed invention. Hess et al. '219 does not teach a method of operation of the microdosing device including a step of pausing for a pre-determined time separation period between a delivery time period and activation of the drying function unit to remove liquid residues from the dosing chamber, as required by Claim 10.

In further support of the argument that Hess et al. '219 does not teach the concept of a pre-determined time separation, or a time delay, Hess et al. '219 discloses that the vibrating unit may continue after the inhalation cycle has been completed, in conjunction with the heating element. More specifically, Hess et al. '219 advocates, at column 7, lines 18-22, the continuation of the actuation of the "vibrating means" after the inhalation cycle has ended, rather than any time delay to separate the inhalation and drying cycles. This arrangement has the disadvantage that any residue remaining in the dosing chamber may be introduced into the inhalation cycle, resulting in imprecise dosing by the microdosing device.

The microdosing device according to the claimed invention is specifically directed to overcome this failing of the prior art by providing a distinct, time-separated drying of the dosing chamber. By providing a time-separated drying time for removing residue from the dosing chamber, the microdosing device ensures a more precise dosing, in that the user, for example, is no longer inhaling during the drying time. Further, the time-separated drying period still ensures that residue is eliminated before a subsequent delivery/inhalation cycle is initiated. These advantages are not realized, or anticipated, by the teaching of Hess et al. '219.

Claim 11 depends from Claim 10. For the reasons cited above, the subject matter of Claim 11 is further not disclosed by Hess et al. '219.

-Claims 12-13

Appellants argue that Examiner's assertion that Hess et al. '219 discloses that "inherently there is a pause between the inhalation and the drying period" is incorrect. Hess et al. '219 does not disclose a method of operating a microdosing device comprising the step of activating the time delay unit for a pre-determined time-separation, as required by Claim 12. The argument presented above with respect to Claim 10 is further incorporated herein.

Claim 13 depends from Claim 12. For the reasons cited above, the subject matter of Claim 13 is further not disclosed by Hess et al. '219.

-Claims 14-19

Appellants argue that Examiner's assertion that Hess et al. '219 discloses that "inherently there is a pause between the inhalation and the drying period" is incorrect. Hess et al. '219 does not disclose the method for dosing small liquid quantities comprising the step of deactivating the vibrating unit and initiating a time delay, as required by Claim 14. The argument present above with respect to Claim 10 is further incorporated herein.

Claims 15-19 depend from Claim 14. For the reasons cited above, the subject matter of Claims 15-19 is further not disclosed by Hess et al. '219.

Reversal of the Examiner's rejection of Claims 10-19 is respectfully solicited.

Respectfully submitted,

  
Terryence F. Chapman

TFC/smd

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	Steven R. Thiel	Reg. No. 53 685
	Donald J. Wallace	Reg. No. 43 977
	Sidney B. Williams, Jr.	Reg. No. 24 949

Encl: Claims Appendix  
Evidence Appendix  
Related Proceedings Appendix  
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CLAIMS APPENDIX

1-9. (Canceled)

10. A method of operating a microdosing device having a dosing chamber for the at least partial reception of a liquid quantity and with which is associated at least one discharge opening, a vibrating unit in operative connection with at least one boundary surface of the dosing chamber in order to vibrate the same for a discharge process, a delivery function unit, connected to the vibrating unit, for activating the latter during a delivery time period, and a drying function unit, the method comprising the steps of:

activating the vibrating unit during a delivery time period;

pausing for a pre-determined time separation period; and

activating the drying function unit to remove liquid residues from the dosing chamber.

11. The method according to Claim 10, wherein the delivery function unit and drying function unit are parts of a common electronic control.

12. A method of operating a microdosing device having a dosing chamber for the at least partial reception of a liquid quantity and with which is associated at least one discharge opening, a vibrating unit in operative connection with at least one boundary surface of the dosing chamber in order to vibrate the same for a discharge process, a delivery function unit, connected to the vibrating unit, for activating the latter during a delivery time period, and a drying function unit for removing liquid residues from the dosing chamber, configured for activation in time-separated manner with respect to the delivery function unit, wherein the delivery function unit and drying function unit are parts of a common

electronic control device provided with a time function element for coordinating the time-separated activating processes of the delivery function unit and the drying function unit, the method comprising the steps of:

activating the delivery function unit to dispense a medium;

activating the time delay unit for a pre-determined time-separation; and

activating the drying function unit for a drying process.

13. The method according to Claim 12, wherein the drying function unit is connected to the vibrating unit and further comprising the step of activating the vibrating unit for the drying process.

14. A method for dosing small liquid quantities by the vibration of at least one boundary surface of a dosing chamber by activating and deactivating a vibrating unit, comprising the steps of:

activating the vibrating unit for a delivery time period for the discharge of the liquid quantity,

deactivating the vibrating unit and initiating a time delay; and

initiating a drying process to remove liquid residues remaining in the dosing chamber.

15. The method according to claim 14, wherein the drying process further comprises activating the vibrating unit over a drying time period.

16. The method according to claim 15, wherein the drying process further comprises the step of activating a heating device affecting the dosing chamber.

17. The method according to claim 16, wherein the drying process further comprises the step of activating a delivery device for pumping out the liquid residues.

18. The method according to claim 14, wherein the drying process further comprises the step of activating a heating device affecting the dosing chamber.

19. The method according to claim 14, wherein the drying process further comprises the step of activating a delivery device for pumping out the liquid residues.

EVIDENCE APPENDIX

There is no evidence.



RELATED PROCEEDINGS APPENDIX

There are no related proceedings.